

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 892 396 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
24.11.1999 Bulletin 1999/47

(51) Int. Cl.⁶: **G11B 7/125**, G11B 7/135,
G11B 7/12

(43) Date of publication A2:
20.01.1999 Bulletin 1999/03

(21) Application number: 98112902.6

(22) Date of filing: 10.07.1998

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventor: **Sakai, Keiji**
Nara-shi, Nara-ken (JP)

(74) Representative:
Müller, Frithjof E., Dipl.-Ing.
Patentanwälte
MÜLLER & HOFFMANN,
Innere Wiener Strasse 17
81667 München (DE)

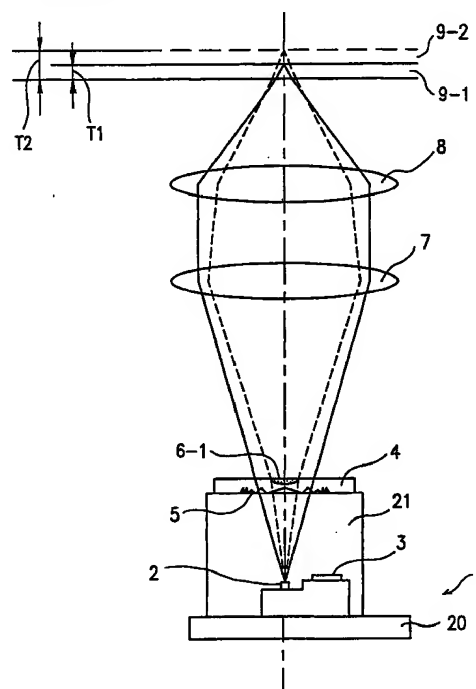
(30) Priority: 14.07.1997 JP 18879697

(71) Applicant:
Sharp Kabushiki Kaisha
Osaka-shi, Osaka 545-8522 (JP)

(54) Hologram laser unit and two-focus type optical pickup

(57) The hologram laser unit of this invention includes a laser light source (2) and an optical detector (3) formed integrally and secured to an optical system including an objective lens (8), wherein an optical element (4) is disposed between the laser light source and the objective lens, a hologram element (5) is formed on a surface of the optical element facing the laser light source, and an aberration compensation element (6-1) is formed on a surface of the optical element facing the objective lens, the optical element being constructed so that a light beam output from the laser light source and converged by the objective lens is divided into two light beams.

FIG. 1



EP 0 892 396 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 11 2902

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
P,X	JP 09 245364 A (MATSUSHITA ELECTRIC IND CO LTD) 19 September 1997 (1997-09-19) -& US 5 867 468 A (MORI ET AL.) 2 February 1999 (1999-02-02) * abstract; figures 1A-4 * * column 5, line 8 - column 9, line 10 * ---	1-3,5-7, 9-12	G11B7/125 G11B7/135 G11B7/12
P,A	EP 0 831 471 A (SEIKO EPSON CORP) 25 March 1998 (1998-03-25) * abstract; figures 1-5,10-29 * * column 12, line 4 - column 16, line 5 * * column 18, line 54 - column 30, line 31 * ---	1-15	
P,A	EP 0 802 529 A (NIPPON ELECTRIC CO) 22 October 1997 (1997-10-22) * abstract; figures 1-6 * * column 5, line 13 - column 8, line 40 * ---	1-15	
A	EP 0 747 893 A (NIPPON ELECTRIC CO) 11 December 1996 (1996-12-11) * abstract; figures 1-3B * * page 3, line 20 - page 4, line 33 * ---	1-15	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
A	EP 0 745 983 A (DAE WOO ELECTRONICS CO LTD) 4 December 1996 (1996-12-04) * abstract; figures 2,5,7 * * column 2, line 46 - column 3, line 23 * * column 6, line 42 - column 7, line 27 * * column 8, line 15 - line 48 * ---	1-15	G11B
A	EP 0 610 055 A (MATSUSHITA ELECTRIC IND CO LTD) 10 August 1994 (1994-08-10) * abstract; figures 4-26 * * column 31, line 25 - column 57, line 47 * * -----	1-15	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 30 September 1999	Examiner Pariset, N
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 11 2902

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-09-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 09245364 A	19-09-1997	US 5867468 A	02-02-1999
EP 0831471 A	25-03-1998	WO 9735306 A	25-09-1997
EP 0802529 A	22-10-1997	JP 9282699 A	31-10-1997
		US 5923635 A	13-07-1999
EP 0747893 A	11-12-1996	JP 2713257 B	16-02-1998
		JP 9054977 A	25-02-1997
		JP 2725653 B	11-03-1998
		JP 9073654 A	18-03-1997
		JP 9054973 A	25-02-1997
		US 5696750 A	09-12-1997
EP 0745983 A	04-12-1996	CN 1146595 A	02-04-1997
		JP 9022540 A	21-01-1997
		US 5777971 A	07-07-1998
EP 0610055 A	10-08-1994	EP 0836178 A	15-04-1998
		JP 8062493 A	08-03-1996
		JP 2532818 B	11-09-1996
		JP 7098431 A	11-04-1995
		US 5446565 A	29-08-1995
		US 5815293 A	29-09-1998
		CN 1098508 A	08-02-1995

EPO FORM P0459 For more details about this annex : see Official Journal of the European Patent Office, No. 12/82